

STANDARD FORM NO. 64

Office Memorandum • UNITED STATES GOVERNMENT

TO : The Files

DATE: 19 February 1957

FROM :

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SUBJECT: Cursory Evaluation of the TA-1 Transmitter Adapter

1. A physical inspection of the Transmitter Adapter TA-1 revealed the following items:

- a. The transmitter loading block is not held securely.
- b. The telex earset phone tips short to the chassis when they are inserted in the phone tip receptacle.
- c. One edge of the chassis frame is not held down.
- d. The circuit diagram is in error in regard to the taps on the encapsulated coil where (0) position is shown open. And the I₄ coil is shown across the tank coil in the I₀ position.

2. An electrical test of the Transmitter Adapter TA-1 coupled to an ac receiver (RCA Model 6, RF-9) provided the following information:

a. During normal operation of the TA-1 the bfo is on at all times. This condition interferes with the reception of modulated transmissions.

b. The transmit receive switch does not cut out or reduce receiver volume when in the transmit position as it apparently should do from the schematic.

c. Hand capacity greatly affects tuning of the transmitter when adjusting for normal power output.

d. The calibration is not correct. Example: to tune to

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e. The receiver input is by-passed (loaded down) with two .005 ufd capacitors in series (bfo circuit) this condition may affect the receiver sensitivity.

f. The power output of the transmitter TA-1 was measured with resistive loads in series with the .01 ufd blocking capacitor to ground. The following results in tabulated form indicate power output of the TA-1:

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ANTENNA LOADS OHMS & WATTS

Freq mc	72.5 ohms P _o (watts)	152 ohms P _o (watts)	313 ohms P _o (watts)	558 ohms P _o (watts)	1215 ohms P _o (watts)
	3.5	3.14	3.26	3.3	3.8
	3.67	3.5	3.39	3.56	3.94
	3.5	2.26	3.26	3.65	3.94
	2.56	3.42	2.71	2.3	2.34 *
	1.44	1.85	1.9	1.48	1.94
	0.876	0.37, 972	0.464, 2	0.891, 74	1.09
	1.74	2.19	2.1	2.18	2.34
	1.04	1.26	1.36	1.34	1.40

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ac input voltage = 120V/ac

* With the 1215 ohm load, the TA-1 did not load properly at this frequency. (Band end)

g. Maximum power output on the high or low bands does not coincide with the power outputs mentioned in the Transmitter TA-1 Equipment Handbook.

3. Recommendations:

a. The schematic should be corrected to correspond to the final circuit configuration.

b. The calibration should be corrected to provide the operator with a nominal indication of correct operating frequency.

c. The chassis holes providing entry for the phone tips into the phone tip receptacle should be insulated or enlarged to insure that the tips do not short to the chassis.

d. The other mechanical defects listed under 1. a. & c. are not considered serious but should be corrected if time permits.

e. No recommendation can be given concerning hand capacity effects noticeable when tuning the transmitter because of the small size of the packaged unit, proximity of antenna loading block to the hand while tuning and of the fact that some hand capacity effects are normally present in miniaturized transmitters.

f. An effective ON-OFF switch must be provided for the bfo.

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